Chapter 2
PLANNING AREA DESCRIPTION

PLAN BOUNDARIES

The UEC Planning Area incorporates the northern reaches of the SFWMD on the east coast. The area includes most of Martin (92%) and St. Lucie (92%) counties, and a small portion of Okeechobee County (12%), as shown in Figure 6. The percentages do not include the county areas within Lake Okeechobee. The portions of these counties within the planning area will be referred to as the Martin Area, St. Lucie Area, and Okeechobee Area in this document. The boundary of the UEC Planning Area generally reflects the drainage basins of the C-23, C-24, C-25, and C-44 (St. Lucie Canal) canals. The northern boundary corresponds to the St. Lucie-Indian River county line which is also the SFWMD/St. Johns River Water Management District jurisdictional boundary. The southern boundary is the Martin-Palm Beach county line.

RELATED PLANNING AREAS

The District has established four water supply planning areas: (1) Upper East Coast, (2) Lower East Coast, (3) Lower West Coast, and the (4) Kissimmee Basin. The planning areas are generally defined by the drainage divides of major surface water systems in South Florida. The major water bodies considered in establishing these boundaries include the Kissimmee River, Lake Okeechobee, the Everglades and the Big Cypress Swamp. The series of canals, levees, pump stations, and storage areas that comprise the Central and South Florida Flood Control Project were also considered because these structures have altered the hydrology of the natural water bodies (see Surface Water Resources discussion in Chapter 3).

Lake Okeechobee is considered part of each of the planning areas, which are connected to the lake through a regional surface water system. The Kissimmee River (Kissimmee Basin Planning Area) is the predominant surface water inflow into the lake, while the remaining three planning areas receive outflows from the lake. The major outflows are: (a) the Caloosahatchee River to the Lower West Coast; (b) the St. Lucie Canal to the Upper East Coast; and (c) the West Palm Beach, Hillsborough, North New River, and Miami canals to the Lower East Coast.

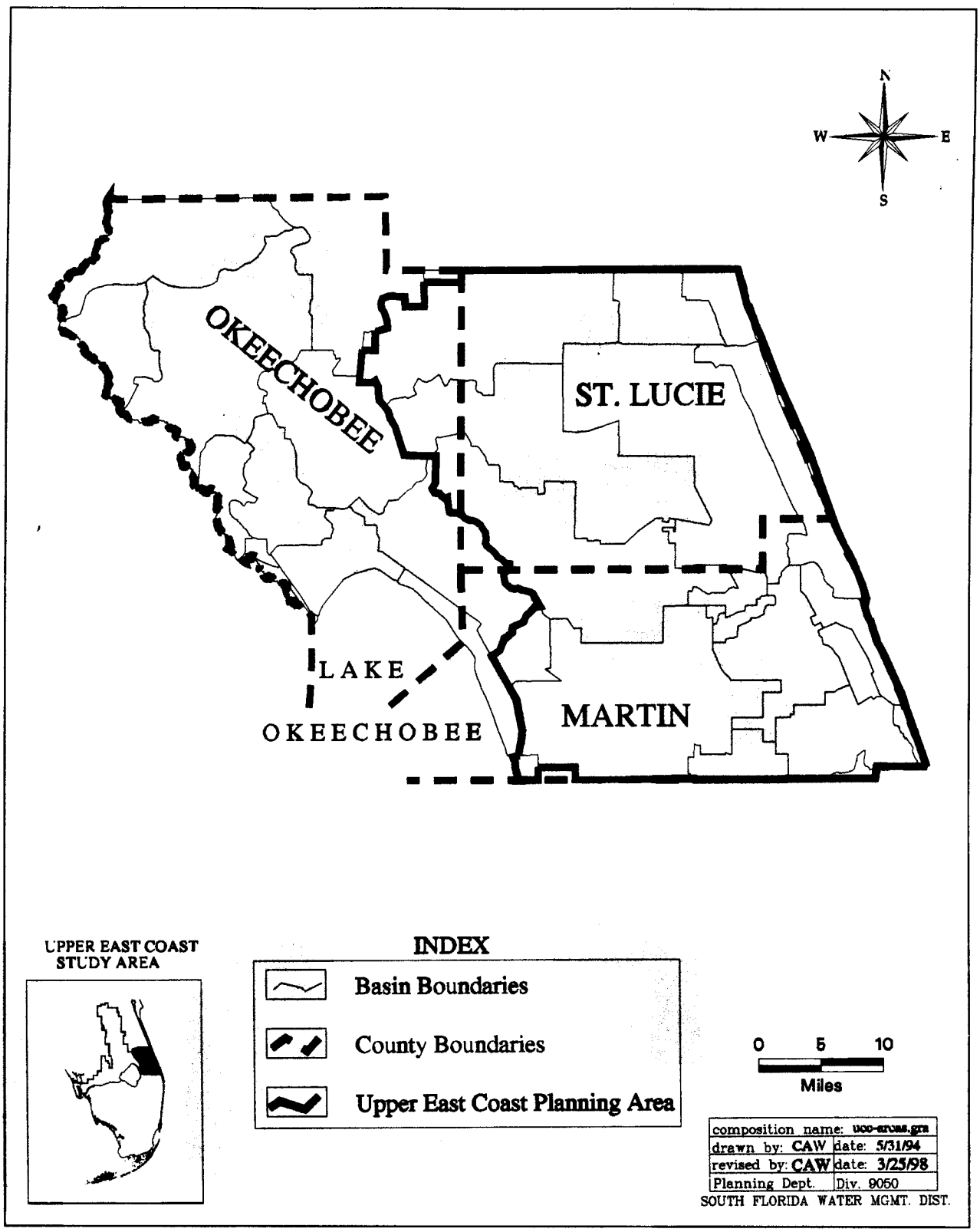

Figure 6. Upper East Coast Planning Area.

The Caloosahatchee River (C-43) and the St. Lucie Canal (C-44) are used primarily for water releases from the lake when lake levels exceed water stages of the U.S. Army Corps of Engineer's regulation schedule. In addition to regulatory discharges for flood protection, these canals receive water deliveries from the lake to maintain water levels for navigation and water supply. The C-44 Basin within the UEC Planning Area is partially dependent on the lake for supplemental water supply and aquifer recharge. Evaluation of Lake Okeechobee and its associated demands is incorporated into the Lower East Coast Water Supply Plan.

PHYSICAL FEATURES

Geography and Climate

The UEC Planning Area covers over 1,100 square miles and has an average elevation of 20 feet. Average seasonal temperatures range from 64 degrees during the winter to about 81 degrees during the summer (University of Florida, 1993). Annual average rainfall in the planning area is about 51 inches. About 72 percent of the annual rainfall occurs during the May through October wet season. Rainfall is further discussed in Chapter 3.

Physiography

The Upper East Coast Planning Area is characterized by three principal physiographic zones which generally trend from east to west. These zones are identified by White (1970) as: (1) the Atlantic Coastal Ridge, (2) the Eastern Valley, and (3) the Osceola Plain. The Atlantic Coastal Ridge, made of relict beach ridges and sand bars, parallels the coast and has a width ranging from several hundred feet to a couple of miles. The ridge varies in elevation from sea level to a high of 86 feet above sea level in the sand hills of Jonathan Dickinson State Park.

West of the Atlantic Coastal Ridge is the Eastern Valley, which is a flat relict beach ridge plain. Most of the planning area lies within the Eastern Valley. The valley is generally lower than the ridge, with land elevations ranging from 15 to 30 feet above mean sea level, and an average width of 30 miles. These areas are characteristically pocketed with shallow lakes and marshes and have limited natural drainage. Prior to development and construction of canals, the valley drained by a slow drift of water through multiple sloughs to the St. Lucie River, the Loxahatchee River and the Everglades. This area contains the Savannas State Park, Pal-Mar, Loxahatchee Slough, and the Allapattah, St. Lucie and Osceola Flats.

The Osceola Plain lies west of the Eastern Valley in St. Lucie County and intrudes into the Eastern Valley in Martin County, where it terminates at Indiantown. The elevation of the plain in Martin County is approximately 40 feet.

POPULATION

The driving force behind urban water demand is population, and most of the population in the planning area resides along the coast in Martin and St. Lucie counties. The most significant population increase is expected to occur in the St. Lucie Area. By contrast, the Okeechobee Area is expected to have a minor increase of 610 residents (Table 3).

Table 3. Population, 1990-2010.

Region	1990	2010	Increase	% Growth
Martin Area	100,900	154,200	53,300	53
St. Lucie Area	150,171	290,100	139,929	93
Okeechobee Area	1,015	1,625	610	60
UEC Planning Area	252,086	445,925	193,839	77

Source: 1990 data from U.S. Bureau of the Census; 2010 data from local govt. comprehensive plans.

MUNICIPALITIES

There are seven municipalities in the planning area, all of which are in Martin and St. Lucie counties. These are Fort Pierce, Port St. Lucie, St. Lucie Village, Stuart, Sewalls Point, Jupiter Island, and Ocean Breeze Park.

AGRICULTURE

The driving force behind agricultural water demand is acreage of irrigated agricultural crops. Citrus is the major irrigated agricultural crop in the planning area, comprising 86 percent of the total irrigated crop acreage. While Okeechobee County is anticipated to have the highest percent increase in irrigated citrus acreage, St. Lucie County is expected to have the highest actual increase in irrigated citrus acreage by 2010 (Table 4). Estimates and projections of irrigated acreage for all crops are presented in Chapter 6.

Table 4. Irrigated Citrus Acreage, 1990-2010.

Region	1990	2010	Increase	% Growth
Martin County	46,283	50,079	3,796	8
St. Lucie County	85,390	121,832	36,442	43
Okeechobee Area	2,460	4,474	2,014	82
UEC Planning Area	134,133	176,385	42,252	32

Source: 1990 estimates from Florida Agricultural Statistics Service; 2010 projections from SFWMD staff calculations (provided in Appendix G).

LAND USE

Existing Land Use

The UEC Planning Area is predominantly agricultural, especially in St. Lucie County and the Okeechobee Area. Urban land use is primarily located in the coastal portions of the Martin and St. Lucie areas. The highest percentages of wetlands are in Martin County and the Okeechobee Area (Table 5). Maps of land uses within the UEC Planning Area are provided in Appendix B.

Table 5. Acreages and Percentages of Land Use by County.

Land Use	Martin County		St. Lucie County		Okeechobee Area		UEC Planning Area	
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Agriculture	137,361	40	191,081	50	35,601	60	364,043	46
Urban and Transportation	50,416	15	72,500	19	717	1	123,633	16
Wetlands	54,116	16	33,374	9	11,669	20	99,159	13
Upland Forest	64,201	19	38,880	10	7,874	13	110,955	14
Rangeland	5,503	2	8,129	2	1,558	3	15,190	2
Barren	2,075	1	316	0	87	0	2,478	0
Water	26,706	8	40,612	10	1,955	3	69,273	9
Total	340,378	100	384,892	100	59,461	100	784,731	100

Source: SFWMD Florida Land Use/Land Cover GIS database, 1995.
Note: Percentages rounded to the nearest tenth.

Updated Land Use Classification System

The Florida Department of Transportation (FDOT) Florida Land Use/Land Cover Classification System (FLUCCS) was used to delineate and classify land use/land cover for this plan. This FDOT FLUCCS classification system is now the statewide standard for all water management districts and state agencies. Prior to 1995, the District's 1988 land use/land cover classification system was used, including information contained in the Draft UEC Water Supply Plan Background Document, dated October 1994.

The migration to the FDOT FLUCCS classification system has resulted in dramatic changes in the acreage estimates for a number of land use/land cover types in the UEC Planning Area. Those land uses most affected include wetlands, forests, and water. Wetland acreage decreased while upland forests increased. This change was caused by reclassifying certain types of forested wetlands, such as pine flatwoods, to forested uplands. The large increase in water acreage was caused by the addition of the Indian River Lagoon, and the delineation of numerous reservoirs and onsite retention ponds in agricultural areas under the FDOT FLUCCS classification system.

Other acreage changes are due to the actual changes in land use/land cover that occurred from 1988 to 1995.

Land Use Trends

Based on local government comprehensive plans, urbanization is anticipated to increase in the Martin and St. Lucie areas while the Okeechobee Area is expected to remain agricultural. Agriculture has been the predominant land use in all three counties and is projected to remain so in the future. However, in Martin and St. Lucie counties, the percentage of agricultural land use is projected to decrease as a result of urban encroachment. The most significant change in land use is the doubling of urban acreage, which reflects population growth in these two counties.